

FIRST NEARCTIC RECORD OF THE GENUS *NORDLANDERIA*  
(HYMENOPTERA: EUCOILIDAE), WITH DESCRIPTIONS  
OF TWO NEW SPECIES

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*Abstract.*—The genus *Nordlanderia* (Hymenoptera: Cynipoidea, Eucoilidae) is reported from the Nearctic region for the first time and two new species are described. They differ from their African counterparts by the absence of coriaceous sculpturing below the mesopleural carina and the presence of apical punctulations on the abdominal tergites. This genus is apparently restricted in distribution to arid areas of western North America and southern Africa.

*Key Words:* Distribution, southern Africa, western North America, Cynipoidea, Eucoilidae

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Quinlan (1986) described the genus *Nordlanderia* and three new species from material collected in southern Africa. The genus is distinguished by the presence of triangular projections on the supraclypeal area and the anterior region of the face. This is consistent with the general tendency toward facial projections in the *Gronotoma* group of genera. This genus, previously known only from Africa, can be added to the known Nearctic fauna with the discovery of the two new species described.

METHODS AND TERMS

Descriptions and measurements are largely based on scanning electron micrographs due to the small size of the specimens (about 1 mm total length) and the predominantly reflective integument. Terms for surface sculpture follow Harris (1979) and morphological terms are after Richards (1977), Quinlan (1978) and Nordlander (1982).

Type material will be deposited in the following institutions: British Museum

(Natural History); California Academy of Sciences; and the University of Idaho.

*Nordlanderia merickeli* Miller,

NEW SPECIES

Figs. 1-6

Female.—1.15 mm long. Head and thorax black, antennae dark brown, gaster dark red-brown, legs yellow-brown and wings hyaline.

*Head* subcircular in frontal view. Compound eyes normal size, weakly converging ventrally and with several very short scattered hairs between facets. Vertex smooth, with few hairs; ocelli of moderate size; posterior ocellar line longer than lateral ocellar line which is longer than ocular ocellar line. Occiput smooth, with few setiferous punctures. Face smooth, with scattered hairs below toruli and line of hairs along the inner orbital margins. Frons slightly raised. Subocular sulcus distinct, with a few poorly defined striae above and below (Fig. 1). Cheeks below sulcus and supraclypeal area strongly

protruding, forming three spine-like keels (Figs. 1, 2, 4). Mandibles bidentate; inner tooth two-thirds length of outer tooth (Fig. 1). Antennae 13-segmented, clavate, with very weakly defined 8-segmented club, segment 3 equal in length to segment 4.

*Thorax* convex in lateral view. Pronotal plate not protruding; median bridge width to plate width ratio, 13:35; lateral margins parallel; foveae on lateral margins open (Fig. 3). Propleuron smooth, with scattered long hairs except on anterior margin where vestiture is both dense and long (Fig. 2). Mesoscutum smooth, with line of hairs replacing the notali. Scutellum with lateral bars smooth; scutellar plate longer than wide, with large posterior fovea and margins of plate bordered by setiferous punctures (Fig. 5); dorsal surface of scutellum above margin carinate-rugose, with circle of inwardly bent hairs around plate; scutellum below margin with widely spaced and regularly radiating striae (Fig. 6). Mesopleural carina complete; pleuron above and below suture smooth; area anterior to subalar pit depressed (Fig. 2). Metanotal plate indented posteriorly, as wide as distance between the propodeal carinae (Fig. 5). Metapleuron smooth; metapleural groove absent; pleuron depressed dorsal to obsolete ridge 1 (Fig. 2); lobe over propodeal spiracle wing-like, nearly 2× as long as wide (Fig. 6). Propodeal carinae naked, parallel anteriorly and converging towards nucha posteriorly; lateral carinal extensions continuing to near spiracle (Figs. 5, 6); propodeal surface smooth, with few

hairs between the carinae, and densely pubescent laterally (Fig. 5). Legs normal and moderately pubescent.

*Gaster* with segment 1 obscured by segment 2 when viewed laterally; segment 1 forming narrow ring; tergite 2 with a basal ring of hairs, lacking any felt-like pubescence; tergite 2 the largest, occupying whole lateral surface of gaster; posterior margins of segment 2–4 punctulate; punctulations of tergite 2 faint.

*Wing* surface pubescent, with marginal ciliation of moderate length; second radial abscissa noticeably longer than first radial abscissa; radial cell closed on wing margin; submarginal vein distinct; median, discoidal and subdiscoidal veins barely discernible in some specimens.

**Male.**—1.18 mm long. Antennae 15-segmented, filiform; segment 3 equal in length to segment 4, very slightly curved, not swollen distally. Habitus similar to female, differing in that metapleural lobe over propodeal spiracle nearly as wide as long; medial area of propodeum densely pubescent; facial protuberances not generally as well developed.

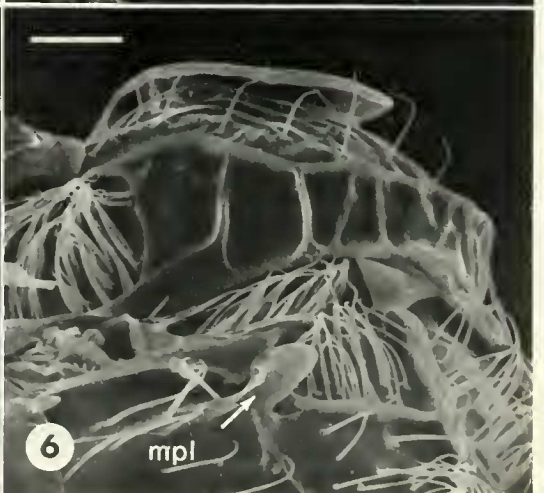
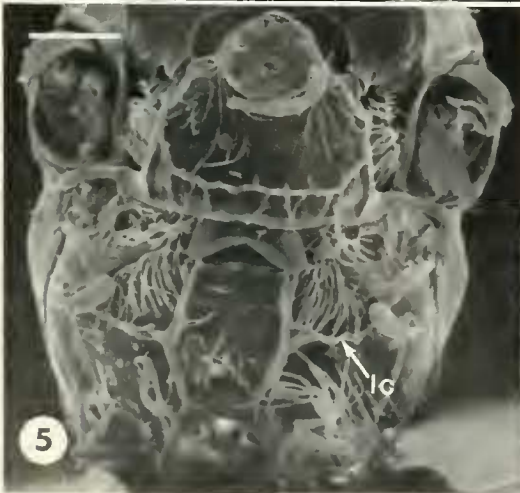
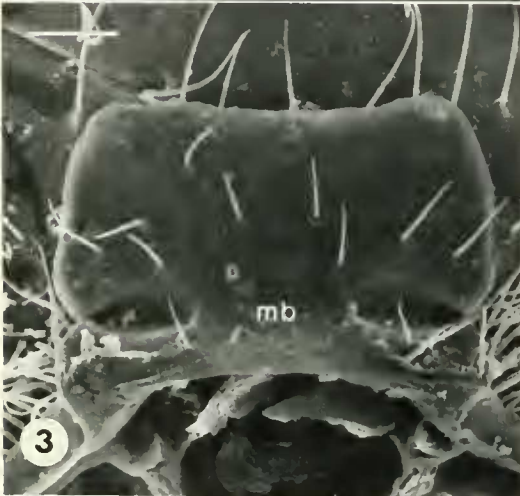
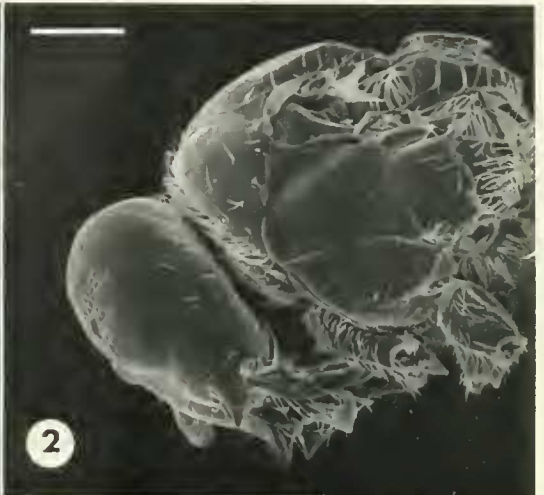
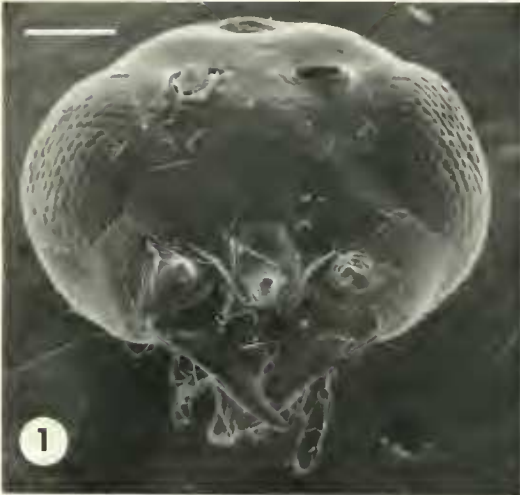
**Material examined.**—U.S.A. Idaho: Nez Perce Co., Hells Gate State Park, T. D. Miller collector; 13-V-83 (1 male), 5-VI-83 (1 male, 1 female), 20-VI-83 (1 male), 15-VII-83 (1 male), 20-VII-83 (3 females), 23-VII-83 (1 male, 1 female). Washington: Asotin Co., 9 mi. W. Clarkston, T. D. Miller collector; 20-V-84 (1 male).

**Types.**—Holotype female, allotype male,

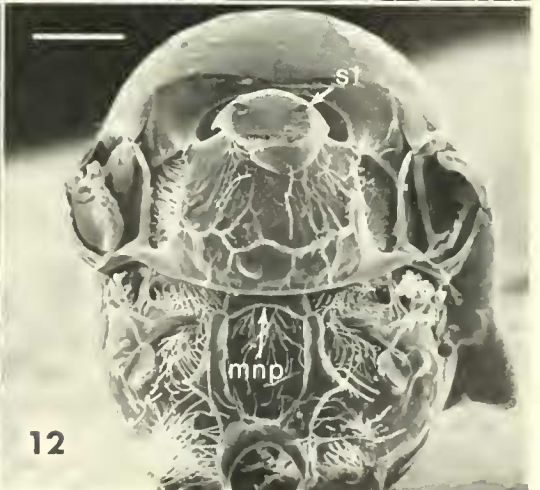
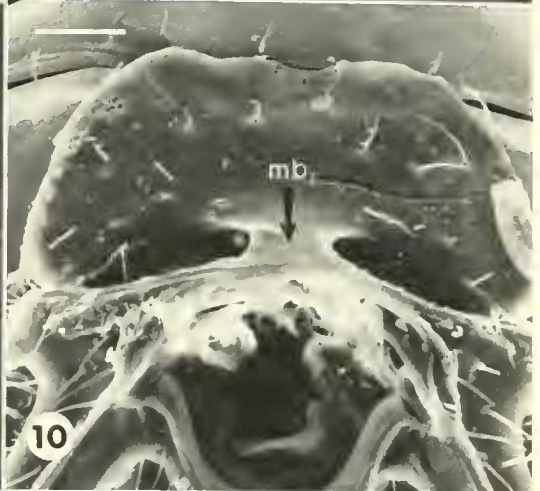
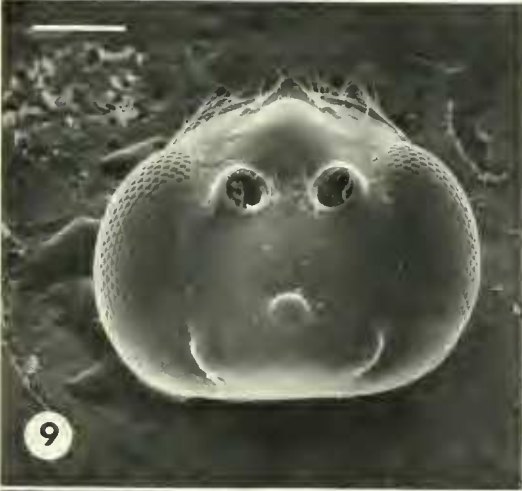
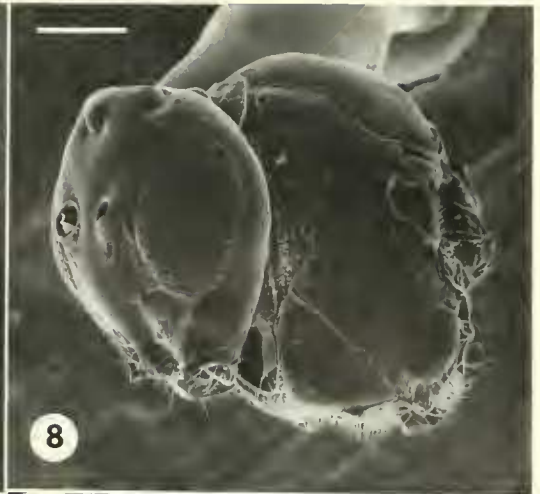
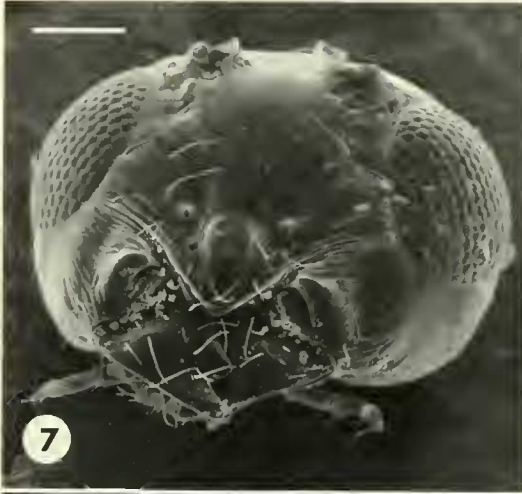
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Figs. 1–6. *Nordlanderia merickeli*. 1, Frontal view of female head (scale line 75  $\mu$ m). 2, Lateral view of female head and thorax (scale line 80  $\mu$ m). 3, Pronotal plate of male (scale line 30  $\mu$ m). 4, Dorsal view of female facial projections (scale line 30  $\mu$ m). 5, Posterior view of female thorax (scale line 150  $\mu$ m). 6, Lateral view of female scutellum (scale line 35  $\mu$ m). (mb = median bridge; lc = lateral carinae; mpl = metapleural lobe.)

Figs. 7–12. *Nordlanderia navajocae*. 7, Frontal view of male head (scale line 75  $\mu$ m). 8, Anterior view of male head and thorax (scale line 100  $\mu$ m). 9, Dorsal view of female head (scale line 105  $\mu$ m). 10, Pronotal plate of male (scale line 87  $\mu$ m). 11, Lateral view of female thorax (scale line 135  $\mu$ m). 12, Posterior view of female thorax (scale line 150  $\mu$ m). (mb = median bridge; r1 = metapleural ridge 1; st = scutellar tubercle; mnp = metanotal plate.)







and 2 female paratypes to be deposited in the California Academy of Sciences; 1 male and 1 female paratype to be deposited in the British Museum (Natural History); 1 male and 1 female paratype gold coated on scanning electron microscope (S.E.M.) stubs and 2 uncoated males and 1 female paratype deposited in the University of Idaho.

**Etymology.**—This species is named in honor of Frank W. Merickel of the University of Idaho for his valued friendship and support over the years.

**Remarks.**—This species is distinguished from the other new Nearctic species, *navajoe*, by the broader median bridge of the pronotal plate, size of the metanotal plate, complete lateral extensions of the propodeal carinae, lack of sculpture on the mesopleuron, ridge 1 absent on the metapleuron, and the well developed lobe over the propodeal spiracle.

### *Nordlanderia navajoe* Miller

#### NEW SPECIES

Figs. 7–12

**Female.**—1.1 mm long. Antennae, head, thorax and gaster black, legs yellow-brown and wings hyaline.

**Head** subcircular in frontal view. Compound eyes normal size, not protruding, nearly parallel. Vertex smooth, with scattered setiferous punctures, ocelli of moderate size; posterior ocellar line longer than lateral ocellar line which is longer than ocular ocellar line (Fig. 9). Occiput smooth, with few hairs. Face smooth, with scant vestiture below toruli and irregular line of hairs along inner ocular margin. Frons slightly protruding. Subocular sulcus distinct, with well defined striae above and below, cheeks completely striate (Fig. 7). Cheeks below subocular sulcus and supraclypeal area moderately protruding to form 3 tooth-like projections (Figs. 7, 8, 9). Mandibles bidentate; inner tooth three-fourths length of outer tooth (Fig. 7). Antennae 13-segmented,

clavate, with weakly defined 10-segmented club; segment 4 greater in length than segment 3.

**Thorax** convex in lateral view. Pronotal plate protruding slightly; median bridge width to plate width ratio, 9:55; lateral margins of plate curved, not parallel; foveae on lateral margins open (Fig. 10). Propleuron smooth, with scattered long hairs except anterior margin which is covered with short, dense hairs (Figs. 8, 11). Mesoscutum smooth; notauli obsolete, replaced by line of hairs in some specimens. Scutellum with lateral bars smooth; scutellar plate longer than wide, with large posterior fovea and lateral margins with single puncture at mid-length; anterior of lateral puncture is small, setiferous tubercle (Fig. 12), setae visible only in perfect specimens; dorsal surface of scutellum above margin areolate-rugose, with few hairs, scutellum below margin carinate-rugose (Figs. 11, 12). Mesopleural carina complete; area below suture smooth, light striations present above suture anteriorly and just below subalar pit (Figs. 8, 11). Metanotal plate indented posteriorly, not as wide as distance between the propodeal carinae (Fig. 12). Metapleuron smooth; metapleural groove absent, ridge 1 distinct (Fig. 11); lobe over propodeal spiracle short, wider than long. Propodeal carinae parallel anteriorly and converging towards nucha posteriorly; lateral carinal extensions poorly developed, not reaching spiracles (Fig. 12); propodeal surface smooth, moderately pubescent, except for naked carinae. Legs normal, moderately pubescent.

**Gaster** with segment 1 obscured by segment 2 when viewed laterally; segment 1 forming narrow ring; tergite 2 with basal ring of hairs, lacking any felt-like pubescence; tergite 2 the largest, occupying whole lateral surface of gaster; posterior margins of tergites 3 and 4 punctulate.

**Wing** surface pubescent, with short marginal ciliation; forewing broad, apically rounded; second radial abscissa slightly

longer than first radial abscissa; radial cell closed on wing margin.

Male.—1.1 mm long. Antennae 15-segmented, filiform; segment 3 curved and swollen distally, greater in length than segment 4. Habitus similar to female, differing in that sculpturing of dorsal scutellar surface is less well defined.

Material examined.—U.S.A. Arizona, Apache Co., 1 mi. south of Ganado, T. D. Miller and F. W. Merickel collectors; 20-VI/1-VII-85 (2 females, 1 male).

Types.—Female holotype to be deposited in the California Academy of Sciences; 1 male and 1 female paratype gold coated on S.E.M. stubs deposited in the University of Idaho.

Etymology.—This species was named for the Navajo Indians upon whose tribal lands this species was discovered.

Remarks.—This species is distinguished from *merickeli* by the distinct striations on the cheeks and mesopleuron, the setiferous tubercles on the scutellar plate, metapleural ridge 1 present, the narrow median bridge of the pronotal plate, absence of lateral propodeal carinae, and the differences in antennal characters.

#### DISCUSSION

The distribution of *Nordlanderia* in North America is apparently restricted to arid areas of the western United States. In addition to the two new species described in this paper several undescribed species await further study. All Nearctic *Nordlanderia* species examined so far, including the undescribed

ones, differ from their African counterparts due to the absence of coriaceous sculpturing below the mesopleural carina and the presence of apical punctulations on the abdominal tergites.

#### ACKNOWLEDGMENTS

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